UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
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January 24, 2011

Mr. Michael J. Pacilio
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer, Exelon Nuclear
4300 Winfield Rd.
Warrenville, IL 60555

SUBJECT: LIMERICK GENERATING STATION - NRC INTEGRATED INSPECTION REPORT 05000352/2010005 AND 05000353/2010005

Dear Mr. Pacilio:

On December 31, 2010, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Limerick Generating Station Units 1 and 2. The enclosed integrated inspection report documents the inspection results which were discussed on January 7, 2011, with Mr. W. Maguire and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel based on the results of the inspection, no findings were identified.

In accordance with 10 Code of Federal Regulations (CFR) Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

Paul G. Krohn

Paul G. Krohn, Chief
Projects Branch 4
Division of Reactor Projects

Docket Nos: 50-352, 50-353
License Nos: NPF-39, NPF-85

Enclosure: Inspection Report 05000352/2010005 and 05000353/2010005
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

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Sincerely,
/RA/
Paul G. Krohn, Chief
Projects Branch 4
Division of Reactor Projects

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos:	50-352, 50-353
License Nos:	NPF-39, NPF-85
Report No:	05000352/2010005 and 05000353/2010005
Licensee:	Exelon Generation Company, LLC
Facility:	Limerick Generating Station, Units 1 & 2
Location:	Sanatoga, PA 19464
Dates:	October 1, 2010 through December 31, 2010
Inspectors:	E. DiPaolo, Senior Resident Inspector N. Sieller, Resident Inspector J. Hawkins, Acting Resident Inspector A. Rosebrook, Senior Project Engineer T. Moslak, Health Physicist J.Caruso, Senior Operations Engineer (Section 1R11.2) J. D'Antonio, Senior Operations Engineer (Section 1R11.2) J. Tomlinson, Operations Engineer (Section 1R11.2) C. Crisden, Emergency Preparedness Specialist
Approved by:	Paul G. Krohn, Chief Projects Branch 4 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000352/2010005; 05000353/2010005; 10/01/2010-12/31/2010; Limerick Generating Station, Units 1 and 2; routine integrated report.

The report covered a three-month period of inspection by resident inspectors, a senior project engineer, a health physicist, an emergency preparedness specialist, and an announced inspection by operations engineers. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight," Revision 4, dated December 2006.

No findings were identified.

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period operating at full rated thermal power (RTP). On December 4, operators reduced power to approximately 94 percent to facilitate main turbine valve testing, control rod scram time testing, a control rod pattern adjustment, and to perform secondary plant maintenance. Power was restored to full RTP on December 5. Unit 1 remained at full RTP for the remainder of the inspection period.

Unit 2 began the inspection period operating at full RTP. On October 23, power was reduced (unplanned) to approximately 50 percent as a result of the trip of the 'A' recirculation pump motor-generator set. Following troubleshooting and repairs to the generator voltage regulator, power was further reduced on October 24 to approximately 33 percent to facilitate the restart of the 'A' recirculation pump. Power was restored to full RTP on October 25. On October 30, operators reduced power to 85 percent to facilitate a follow up control rod pattern adjustment. Power was restored to full RTP on October 31. A power reduction to 85 percent was performed on November 20 to facilitate a control rod pattern adjustment. Full power was restored on November 21. On December 3, power was reduced (unplanned) to approximately 58 percent as a result of the trip of the 'A' recirculation pump motor-generator set. Operators reduced power to approximately 35 percent to facilitate the restart of the 'A' recirculation pump following troubleshooting and repairs to the recirculation pump motor-generator set generator voltage regulator. Full RTP was restored on December 6. On December 18, operators reduced power to approximately 80 percent to facilitate main turbine valve testing, fuel channel distortion testing, and a control rod pattern adjustment. The unit was restored to full RTP on December 19. Unit 2 remained at full RTP for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems and Barrier Integrity

1R01 System Seasonal Adverse Weather Protection (71111.01 - 1 seasonal sample)

a. Inspection Scope

The inspectors assessed the effectiveness of the licensee's cold weather protection program as it related to ensuring that equipment in the facility's spray pond pump house would remain functional and available in cold weather conditions. This equipment includes the emergency service water (ESW) pumps, residual heat removal (RHR) service water pumps, motor-operated valves associated with the spray pond, and support electrical equipment. In addition to reviewing the licensee's program-related documents and procedures, walkdowns were conducted of the freeze protection equipment (e.g., ventilation system dampers, building heating system, etc.) associated with the above systems/components. The inspectors observed plant conditions and evaluated those conditions against criteria documented in procedure GP-7, "Cold Weather Preparation and Operation." Licensee problem identification and resolution associated with cold weather protection was also assessed. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

Partial Walkdown (71111.04Q - 3 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the plant systems listed below to verify operability following realignment after a system outage window or while safety-related equipment in the opposite train was inoperable, undergoing surveillance testing (ST), or potentially degraded. The inspectors used Technical Specifications (TS), Exelon operating procedures, plant piping and instrumentation diagrams (P&ID), and the Updated Final Safety Analysis Report (UFSAR) as guidance for conducting partial system walkdowns. The inspectors reviewed the alignment of system valves and electrical breakers to ensure proper in-service or standby configurations as described in plant procedures and drawings. During the walkdowns, the inspectors evaluated the material condition and general housekeeping of the systems and adjacent spaces. The documents reviewed are listed in the Attachment. The inspectors performed walkdowns of the following areas:

- Emergency diesel generator (EDG) D23 on October 21, 2010;
- 'A' control room emergency fresh air supply system following return-to-service on November 3, 2010; and
- Unit 2 high pressure coolant injection (HPCI) system when the 'B' loop of emergency service water was out-of-service (OOS) on December 2, 2010.

b. Findings

No findings were identified.

1R05 Fire Protection

Fire Protection - Tours (71111.05Q – 4 samples)

a. Inspection Scope

The inspectors conducted a tour of the four areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that combustible materials and ignition sources were controlled in accordance with Exelon's procedures. Fire detection and suppression equipment was verified to be available for use, and passive fire barriers were verified to be maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for OOS, degraded, or inoperable fire protection equipment in accordance with the station's fire plan. The documents reviewed are listed in the Attachment. The inspectors toured the following areas:

- Spray Pond Pumphouse, Western Half (Fire Area 122);
- Spray Pond Pumphouse, Eastern Half (Fire Area 123);

- Control Room and Peripheral Rooms (Fire Area 24); and
- Remote Shutdown Room (Fire Area 26).

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 – 1 internal flooding sample)

a. Inspection Scope

The inspectors reviewed the UFSAR and related flood analysis documents to identify areas that can be affected by internal flooding, to identify features designed to alert operators of a flooding event, and to identify features designed for coping with internal flooding. The inspectors performed a walkdown of the Main Control Room Chiller Rooms (Reactor Enclosure, Elevation 200') and adjacent areas. The inspectors observed flood protection features to assess their ability to minimize the impact of a flooding event. The inspectors performed a review of operator actions contained in off-normal procedures for flooding to verify that the actions can reasonably be used to achieve the desired outcome. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Resident Inspector Quarterly Review (71111.11Q – 1 sample)

a. Inspection Scope

On November 9, 2010, the inspectors observed two annual licensed operator simulator examinations (LSES-2004). The simulator scenarios tested the operators' ability to respond to operating equipment failures, reactivity transients, loss of drywell cooling, and loss of coolant leaks in the drywell. The inspectors observed licensed operator performance including operator critical tasks, which are required to ensure the safe operation of the reactor and protection of the nuclear fuel and primary containment barriers. The inspectors also assessed crew dynamics and supervisory oversight to verify the ability of operators to properly identify and implement appropriate TS actions, regulatory reports, emergency event declarations, and notifications. The inspectors observed training instructor critiques and assessed whether appropriate feedback was provided to the licensed operators. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2 Biennial Requalification Program Review (71111.11B – 1 sample)

a. Inspection Scope

The following inspection activities were performed using NUREG 1021, Revision 9, Supplement 1, "Operator Licensing Examination Standards for Power Reactors," Inspection Procedure Attachment 7111111, "Licensed Operator Requalification Program," Appendix A, "Checklist for Evaluating Facility Testing Material," and Appendix B, "Suggested Interview Topics."

A review was conducted of recent operating history documentation found in inspection reports, licensee event reports, the licensee's corrective action program, and the most recent, NRC plant issues matrix. The inspectors also reviewed specific events from the licensee's corrective action program which indicated possible training deficiencies to verify that they had been appropriately addressed. The senior resident inspector was also consulted for insights regarding licensed operators performance. These reviews did not detect any operational events that were indicative of possible training deficiencies.

For the 2010 examination cycle, the biennial written examinations (i.e., administered in 2009) and annual operating tests administered for weeks three, four, and five were reviewed for content, quality, and excessive overlap to ensure that these exams met the criteria established in the Examination Standards and 10 CFR 55.59.

On December 10, 2010, the results of the annual operating tests for 2010 were reviewed to determine if pass/fail rates were consistent with the guidance of NUREG-1021, Revision 9, Supplement 1, "Operator Licensing Examination Standards for Power Reactors," and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process," were also performed. The review verified the following:

- Crew pass rates were greater than 80 percent (Pass rate was 100 percent);
- Individual pass rates on the written examination were greater than 80 percent (N/A - Biennial written examination was not administered this year);
- Individual pass rates on the job performance measures of the operating exam were greater than 80 percent (Pass rate was 98 percent); and
- More than 75 percent of the individuals passed all portions of the operating examination (Pass rate was 98 percent).

Observations were made of the dynamic simulator examinations and job performance measures (JPMs) administered during the week of November 15, 2010, for Operations and Staff Crew C. These observations included facility evaluations of crew and individual performance during the dynamic simulator examinations and individual performance of JPMs.

The remediation plans for 22 out-of-the-box scenarios were reviewed to assess the effectiveness of the remedial training. Two reactivations were reviewed to ensure that 10 CFR 55.53 license conditions and applicable program requirements were met. Instructors and training/operation's management were interviewed for feedback on their training program.

A sample of ten operator medical examinations were also reviewed for compliance with license conditions, including NRC regulations.

Simulator performance and fidelity were reviewed for conformance to the reference plant control room. Selected simulator deficiency reports were reviewed to assess licensee prioritization and timeliness of resolution. Simulator testing records were reviewed to verify that scheduled tests were performed.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 1 sample)

a. Inspection Scope

The inspectors evaluated Exelon's work practices and follow-up corrective actions for one issue within the scope of the maintenance rule. The inspectors reviewed the performance history of these structures, systems, and components (SSCs) and assessed the effectiveness of Exelon's corrective actions, including any extent-of-condition determinations to address potential common cause or generic implications. The inspectors assessed Exelon's problem identification and resolution actions for these issues to evaluate whether Exelon had appropriately monitored, evaluated, and dispositioned the issues in accordance with Exelon procedures and the requirements of 10 CFR Part 50.65, "Requirements for Monitoring the Effectiveness of Maintenance." In addition, the inspectors reviewed the maintenance rule classifications, performance criteria, and goals for these SSCs and evaluated whether they appeared reasonable and appropriate. The documents reviewed are listed in the Attachment. The inspectors reviewed the following issue:

- Issue Report (IR) 1137553 ESW pinhole leak repair – ESW loop 'B' return piping from Unit 2 RHR pump compartment unit cooler.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 6 samples)

a. Inspection Scope

The inspectors evaluated the effectiveness of Exelon's maintenance risk assessments required by 10 CFR Part 50.65(a)(4). This inspection included discussion with control room operators and risk analysis personnel regarding the use of Exelon's on-line risk monitoring software. The inspectors reviewed equipment tracking documentation, daily work schedules, and performed plant tours to gain assurance that the actual plant configuration matched the assessed configuration. Additionally, the inspectors verified that Exelon's risk management actions, for both planned and emergent work, were consistent with those described in Exelon procedure, ER-AA-600-1042, "On-Line Risk Management." The documents reviewed are listed in the Attachment. The inspectors reviewed the following samples:

- Units 1 and 2 on-line risk profile during the EDG D12 load reject test with the 20 offsite power source unavailable on October 6, 2010;

- Unit 2 on-line risk profile while in single recirculation loop operations following 'A' motor generator (MG) trip October 22 – October 24, 2010;
- Unit 1 on-line risk and compensatory measures during fire header partial outage November 5 – November 8, 2010;
- Units 1 and 2 on-line risk profile when the 'B' control enclosure chiller was discovered to be unavailable due to insufficient ESW flow on November 13, 2010;
- Units 1 and 2 on-line risk profile when the 222 Plant Services bus was de-energized November 24 - 25 due to a supply feeder cable fault; and
- Unit 2 risk profile while in single recirculation loop operations following 'A' MG trip December 3, 2010 – December 5, 2010.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15 - 7 samples)

a. Inspection Scope

The inspectors assessed the technical adequacy of a sample of seven operability evaluations to ensure that Exelon properly justified TS operability and verified that the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors reviewed the UFSAR to verify that the system or component remained available to perform its intended safety function. In addition, the inspectors reviewed compensatory measures implemented to ensure that the measures worked and were adequately controlled. The inspectors also reviewed a sample of IRs to verify that Exelon identified and corrected deficiencies associated with operability evaluations. The documents reviewed are listed in the Attachment. The inspectors reviewed the following evaluations:

- IR 1120701, Radiation monitor failed check source functional test;
- IR 1132289, Degraded wire connection on Unit 1 drywell floor drain sump level monitor;
- IR 1137553, ESW pinhole leak on 'B' loop return piping from Unit 2 RHR pump compartment unit cooler (OPE-10-008, Revision 08);
- IR 1143600, ESW 'B' loop flow balance issues;
- IR 1143434, Unit 1 scram discharge volume (SDV) valve exceeded maximum allowed stroke time;
- IR 1151354, Unit 1 HPCI turbine mechanical overspeed will not reset; and
- IR 1153065, EDG D14 fuel oil supply pressure fluxuations during operations.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 - 8 samples)

a. Inspection Scope

The inspectors reviewed eight post-maintenance tests to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed Exelon's test procedures to verify that the procedures adequately tested the safety functions that may have been affected by the maintenance activity, and that the acceptance criteria in the procedures were consistent with information in the licensing and design basis documents. The inspectors also witnessed the test or reviewed test data to verify that the results adequately demonstrated restoration of the affected safety functions. The documents reviewed are listed in the Attachment. The inspectors reviewed the following samples:

- R1152057, Repair Unit 1 Division IV steam leak detection;
- C0235528, Unit 2 'A' MG set voltage regulator dynamic testing after card replacements;
- C0235261, Troubleshoot and rework Technical Support Center emergency ventilation system outside air damper;
- C0231042, ESW 'B' loop flow balance;
- C0236019, Unit 2 'A' recirculation pump MG repair;
- A1786977, Loss of power to Unit 2 outboard main steam isolation valve logic;
- C0235392, Replace Unit 2 Division III emergency core cooling system inverter; and
- C0236065, Adjust pressure regulator to Unit 1 SDV piping vent primary containment isolation valve (XV-047-1F011).

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 7 samples; 5 routine surveillances, 1 in-service testing (IST) and 1 reactor coolant system leakage)

a. Inspection Scope

The inspectors either witnessed the performance of, or reviewed test data, for seven STs associated with risk-significant SSCs. The reviews verified that Exelon personnel followed TS requirements and that acceptance criteria were appropriate. The inspectors also verified that the station established proper test conditions, as specified in the procedures, that no equipment preconditioning activities occurred, and that acceptance criteria were met. The documents reviewed are listed in the Attachment. The inspectors reviewed the following samples:

- ST-6-052-760, Safeguard Piping Fill Quarterly Valve Test;
- ST-6-060-460-1, Primary Containment Isolation Capability Check;
- ST-6-092-323-1, D13 DG Loss of Coolant Accident Load Reject Testing and Fast Start Operability Test Run;
- ST-6-082-365-0, Inoperable Unit 1 Safeguard Power Supply Actions for Both Units;
- ST-6-049-230-1, Reactor Core Isolation Cooling Pump, Valve & Flow IST;
- ST-6-047-200-1, SDV Exercise Test; and
- ST-6-107-596-2, Drywell Floor Drain Sump/ Equipment Drain Tank Surveillance Log/ OPCON 1, 2, 3 (reactor coolant system leakage).

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness (EP)

1EP2 Alert and Notification System (ANS) Evaluation (71114.02 - 1 sample)

a. Inspection Scope

An onsite review was conducted to assess the maintenance and testing of the current Limerick ANS. The inspectors reviewed ANS procedures and the updated Limerick ANS design report to ensure Exelon's compliance with design report commitments for system maintenance and testing. A sample of IRs pertaining to the ANS was reviewed for causes, trends, and corrective actions. The inspectors observed the conduct of the Limerick monthly siren test. During the inspection, the inspectors also interviewed the Mid-Atlantic EP Manager in regards to the new ANS which is planned for approval in April 2011. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 2. Planning Standard, 10 CFR 50.47(b)(5) and the related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization (ERO) Staffing and Augmentation System (71114.03 - 1 sample)

a. Inspection Scope

The inspectors conducted a review of Limerick's ERO augmentation staffing requirements and the process for notifying and augmenting the ERO was conducted. This was performed to ensure the readiness of key licensee staff to respond to an emergency event and to ensure Exelon's ability to activate their emergency facilities in a timely manner. The inspectors reviewed the Limerick and corporate ERO rosters, station and corporate augmentation reports since March 2009, and CRs related to the ERO staffing augmentation system. The inspectors also reviewed a sampling of ERO responder's training records to ensure training and qualifications were up to date. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 3. Planning Standard, 10 CFR 50.47(b)(2) and related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes (71114.04 - 1 sample)

a. Inspection Scope

Since the last NRC inspection of this program area, Exelon implemented various changes to their Emergency Plan and implementing procedures. Exelon had determined that, in accordance with 10 CFR 50.54(q), any change made to the Plan, and its lower-tier implementing procedures, had not resulted in any decrease in effectiveness of the Plan, and that the revised Plan continued to meet the standards in 50.47(b) and the requirements of 10 CFR 50, Appendix E. The inspectors reviewed all Emergency Action Level changes, including changes to the security EALs as endorsed by NEI 99-02, Revision 5. A sample of emergency plan changes including the changes to lower-tier emergency plan implementing procedures, were evaluated for any potential decreases in effectiveness of the Emergency Plan. However, this review by the inspectors was not documented in an NRC Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety. The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 4. The requirements in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings were identified.

1EP5 Correction of Emergency Preparedness Weaknesses (71114.05 - 1 sample)

a. Inspection Scope

The inspectors reviewed a sampling of self-assessment procedures and reports to assess Exelon's ability to evaluate their EP performance and programs. The inspectors reviewed a sampling of CRs from March 2009 through December 2010, initiated by Exelon at Limerick from drills and audits. Additionally, the inspectors reviewed 10 CFR 50.54(t) audits from 2009 and 2010; and self-assessment reports. This inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 5, Planning Standard, 10 CFR 50.47(b)(14), and the related requirements of 10 CFR 50, Appendix E, were used as reference criteria.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Occupational and Public Radiation Safety

2RS01 Radiological Hazard Assessment and Exposure Controls (71124.01 - 1 sample)

a. Inspection Scope

During the period December 13 - 17, 2010, the inspectors conducted the following activities to verify that the licensee was evaluating, monitoring, and controlling radiological hazards for work performed in locked high radiation areas, including the Independent Spent Fuel Storage Installation (ISFSI), and other radiological controlled areas, and workers were adhering to these controls when working in these areas.

Implementation of these controls was reviewed against the criteria contained in 10 CFR 20, TS's, and Exelon's procedures. The documents reviewed listed in the Attachment.

Radiological Hazards Assessment

The inspectors reviewed recent revisions to radiation protection procedures regarding various radiation protection processes, including radiological postings, and contamination monitoring. The inspectors determined that the new revisions did not reduce the scope or effectiveness of previously established radiological controls.

Radiological Hazards Control and Work Coverage

The inspectors toured accessible radiological controlled areas in Units 1 & 2, including the ISFSI, turbine buildings, and reactor buildings to confirm the accuracy of survey data and the adequacy of postings and radiation work permits (RWP). The inspectors reviewed survey maps for areas toured to determine the timeliness of survey data and the adequacy of RWP controls.

Contamination and Radioactive Material Control

The inspectors observed workers surveying and releasing potentially contaminated materials for unrestricted use. The inspectors verified that the counting instrumentation was located in a low background area and that the instruments sensitivity was appropriate for the type of contamination being measured.

Problem Identification and Resolution

Relevant IRs, associated with radiological controls, and electronic dosimeter dose/dose rate alarm reports initiated between March through November 2010, were reviewed by the inspectors. The inspectors discussed the IRs with licensee staff to determine if the follow up activities were being conducted in an effective and timely manner, commensurate with their safety significance.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Barrier Integrity and Mitigating Systems Cornerstone PIs (71151 - 6 samples)

a. Inspection Scope

The inspectors sampled Exelon's submittal of the Barrier Integrity cornerstone and Mitigating Systems cornerstone PIs listed below to verify the accuracy of the data recorded from October 2009 though September 2010. The inspectors utilized performance indicator definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 6, to verify the basis in reporting for each data element. The inspectors reviewed various

documents, including portions of the main control room logs, issue reports, power history curves, work orders, and system derivation reports. The inspectors also discussed the method for compiling and reporting performance indicators with cognizant engineering personnel and compared graphical representations from the most recent PI report to the raw data to verify that the report correctly reflected the data. The documents reviewed are listed in the Attachment.

Cornerstone: Barrier Integrity

- Units 1 and 2 Reactor Coolant System Leak Rate (BI02); and
- Units 1 and 2 Reactor Coolant System Activity (BI01).

Cornerstone: Mitigating Systems

- Units 1 and 2 Mitigating System Performance Index, Cooling Water Systems (MS10).

b. Findings

No findings of significance were identified.

.2 Occupational Exposure Control Effectiveness PI (71151 - 1 sample)

a. Inspection Scope

The inspectors reviewed implementation of the licensee's Occupational Exposure Control Effectiveness PI Program (OR01). Specifically, the inspectors reviewed electronic dosimetry alarm reports, IRs, and associated documents, for occurrences involving locked high radiation areas, very high radiation areas, and unplanned exposures against the criteria specified in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline, Revision 6," to verify that all occurrences that met the NEI criteria were identified and reported as performance indicators.

b. Findings

No findings were identified.

.3 RETS/ODCM Radiological Effluent Occurrences PI (71151 - 1 sample)

a. Inspection Scope

The inspectors reviewed relevant effluent release issue reports for the period October 2009 through November, 2010, for issues related to the public radiation safety performance indicator, which measures radiological effluent release occurrences that exceed 1.5 mrem/qtr whole body or 5.0 mrem/qtr organ dose for liquid effluents; 5mrads/qtr gamma air dose, 10 mrad/qtr beta air dose, and 7.5 mrads/qtr for organ dose for gaseous effluents. The inspectors reviewed the following documents to ensure the licensee met all requirements of the performance indicator (PR01):

- Monthly projected dose assessment results due to radioactive liquid and gaseous effluent releases;

- Quarterly projected dose assessment results due to radioactive liquid and gaseous effluent releases; and
- Dose assessment procedures.

b. Findings

No findings were identified.

.4 Emergency Preparedness Cornerstone PIs (71151- 3 samples)

a. Inspection Scope

The inspectors reviewed data for Limerick's EP PIs, which are: (1) Drill and Exercise Performance (DEP) (EP01); (2) ERO Drill Participation (EP02); and, (3) ANS Reliability (EP03). The inspectors reviewed the PI data and its supporting documentation from the fourth quarter of 2009 through the third quarter of 2010 to verify the accuracy of the reported data. The review of these PIs was conducted in accordance with NRC Inspection Procedure 71151, using the acceptance criteria documented in NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 6.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems

.1 Review of Items Entered into the Corrective Action Program (CAP)

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors screened all items entered into Limerick's CAP. The inspectors accomplished this by reviewing each new condition report, attending management review committee meetings, and accessing Exelon's computerized database.

b. Findings

No findings were identified.

.2 Semi-Annual Review to Identify Trends (71152 - 1 trend sample)

a. Inspection Scope

The inspectors performed a semi-annual review of site issues, to identify trends that might indicate the existence of more safety significant safety issues, as required by Inspection Procedure 71152, "Identification and Resolution of Problems." The inspectors included in this review, repetitive or closely-related issues that may have been documented by Exelon outside of the corrective action program, such as Plant Health Committee reports including the Top Ten Equipment Issues List, the Plant Health

Committee Issues List, the Open Action Items List, and the Performance Improvement Integration Matrix. The inspectors also reviewed Exelon's corrective action database for the third and fourth quarters of 2010, to assess IRs written in various subject areas (e.g., equipment problems, human performance issues, etc.), as well as individual issues identified during the NRC's daily IR review (Section 4OA2.1).

b. Findings and Observations

No findings were identified. The inspectors assessed that Exelon was identifying issues at a low threshold and entering the issues into the CAP for resolution.

Notwithstanding, the inspectors noted a recent negative trend concerning the health of non-safety-related underground 13kV power supply cables. Within a 7-month period, Limerick experienced three non-safety related cable failures. In two of the three cases, the cables had previously been identified by Exelon as requiring repair or replacement due to degraded insulation that was discovered during testing. Specifically:

- On April 2, 2010, the 122 Plant Services Transformer supply cable faulted shortly after being placed in service following maintenance (IR 1051496). Part of the maintenance had been to repair a known, degraded section of cable insulation. However, the fault occurred in a section of cable that had not been repaired, despite being previously identified as degraded. At the time, Unit 1 was in a refueling outage and therefore the effect on the plant was minimal.
- On June 23, 2010, operators inserted a manual scram on Unit 1 as a result of the loss of both recirculation pumps (IR 1083732). The initiator for the transient was the fault of an underground portion of the 13kV power supply cable to the 144D Technical Support Center Transformer. This, coupled with other non-related equipment failures, resulted in the loss of the operating stator cooling water pump and the tripping of the recirculation motor-generator sets. For more detail see FIN 05000352/2010004-02, "Failure to Identify Incorrectly Adjusted Control Power Relay Resulting in Unit 1 Manual Scram." This cable had not been tested, but had been identified as requiring testing in the future.
- On November 24, 2010, the 222 Plant Services Transformer supply cable faulted, causing the loss of two of the three Unit 2 service water pumps (IR 1144472). This cable was known to have degraded insulation resistance but had not been repaired. Due to the ambient temperatures at the time of the loss (i.e. service water temperatures were cool), Unit 2 was able to maintain full power operations using the remaining service water pump.

The inspectors reviewed the extent of power supply cable insulation degradation at Limerick. The inspectors noted that there were two other 13kV power supply cables that testing had identified as degraded and requiring action in the near term. These cables were associated with the Unit 1 'A' circulating water pump and the Unit 1 'C' circulating water pump. Because of the recent failures, Exelon identified the need to expedite replacement of known degraded cables and testing of the remaining cables. As a result, a high impact team was established to coordinate cable replacements and other corrective actions. At the close of the inspection period, cable replacements were planned to commence in January 2011. In addition, Exelon planned to coordinate with an industry research group to help determine the causes of cable failures and failure mechanisms. The inspectors concluded that Exelon had identified this trend and Exelon's actions taken or planned to address the trend appeared to be comprehensive.

The inspectors determined this trend was not applicable to safety-related cables because test results for the safety-related 4kV underground cables indicated they had acceptable insulation resistance. This was primarily due to more favorable operating conditions (e.g., lower operating voltage and intermittent operation of the load).

.3 Annual Sample: Underground Cable Vault Water Intrusion (71152 - 1 Annual sample)

a. Inspection Scope

The inspectors reviewed Limerick's actions under IR 1056715, which was initiated to track Exelon fleet-wide actions to improve long-term health of medium and low voltage power cables routed in underground structures. The inspectors reviewed the corrective actions taken or planned to assure the timeliness was commensurate with the potential safety significance. The inspectors also interviewed plant personnel regarding the identified issues and implemented corrective actions. Specific documents reviewed are listed in the Attachment.

b. Findings and Observations

No findings were identified.

IR 1003826 was initiated by Limerick to track project actions necessary to establish and maintain the underground manholes and conduits of both safety-related and non-safety-related electrical manholes in a dry condition. As discussed in Section 4OA2.2 above, the inspectors noted a recent negative trend concerning the health of non-safety-related underground 13kV power supply cables. For all three non-safety-related power supply cable failures experienced at Limerick in 2010, Exelon suspected that the wet underground environment contributed to the failure. As a result, Exelon identified the need to expedite replacement of known degraded cables and testing of cables that had not been previously tested.

Exelon's long-term action plan to improve underground cable reliability was still under development at the time of this inspection. The long-term plan will be customized based on the results of manhole inspections, water infiltration rates, and the risk ranking of cables. The inspectors concluded, from review of the draft plan and discussions with engineers, that the long-term plan will address appropriate factors including cable testing, cable replacements, underground drainage system repairs and/ or modifications, etc. For safety-related manholes and conduits, Exelon planned to install a pumping system to maintain them dry. At the time of this inspection, the modification was scheduled for installation by June 1, 2011. Based on a review of the key actions in IR 1056715 and IR 1003826 that have been taken to date, the inspectors concluded that Exelon's planned actions appeared to be timely and would improve long-term health of the cables.

4OA3 Event Follow-up (71153 - 3 samples)

a. Inspection Scope

For the three plant events listed below, the inspectors reviewed and/or observed plant parameters, reviewed personnel performance, and evaluated performance of mitigating systems. The inspectors communicated the plant events to appropriate regional

personnel and compared the event details with criteria contained in Inspection Manual Chapter 0309, "Reactive Inspection Decision Basis for Reactors," for consideration of potential reactive inspection activities. As applicable, the inspectors verified that Exelon made appropriate emergency action classification assessments and properly reported the event in accordance with 10 CFR Parts 50.72 and 50.73. The inspectors reviewed Exelon's follow-up actions related to the events to assure that appropriate corrective actions were implemented commensurate with their safety significance.

- Unit 2 'A' recirculation pump trip on October 23, 2010;
- Loss of Plant Services Bus 222 on November 24, 2010; and
- Unit 2 'A' recirculation pump trip on December 3, 2010.

b. Findings

No findings were identified.

4OA5 Other Activities

.1 Independent Spent Fuel Storage Installation (ISFSI) Monitoring Controls (71124.01/60855 - 1 sample)

a. Inspection Scope

The inspectors reviewed routine operations and monitoring of the ISFSI (Docket No. 72-1004). The inspectors walked down the ISFSI and with the assistance of a Senior Radiation Protection Technician, performed independent dose rate measurements of the storage modules, and confirmed module temperatures were within the required limits. The inspectors also reviewed plant equipment operator logs for ISFSI surveillances, relevant issue reports, and environmental ISFSI dosimetry records. Radiological control activities for the ISFSI were evaluated against 10 CFR 20, ISFSI TS's, and the licensee's procedures.

The inspectors also reviewed the effectiveness of radiological controls for the most recent loading and transfer of five (5) dry storage casks, that was conducted during the June through August 2010 period. Actual worker dose was compared to forecasted estimated exposure and determined be within a reasonable range (< 50% difference) and cumulative exposure was less than 5 person-rem.

b. Findings

No findings were identified.

.2 (Closed) Unresolved Item (URI) 05000352/353/2009006-02, Technical Specification Requirements for Motor-Operated Valve (MOV) Thermal Overload Bypass Feature

a. Inspection Scope

During the 2009 component design bases inspection (CDBI), a URI was opened to determine if Exelon was meeting the intent of TS 3.8.4.2.b regarding the bypassing of thermal overloads on certain manually operated MOVs during an accident condition. Exelon entered the issue into the CAP. The inspectors reviewed the IR and corrective

actions initiated to address the URI, which included a technical evaluation of the issue. The inspectors reviewed procedures OP-LG-108-101-1004, "Valves," Revision 4, and OP-LG-103-102-1002, "Strategies for Successful Transient Mitigation," Revision 5, to determine whether the operators were provided adequate guidance on manually operated MOV operation and bypassing of the thermal overloads. The inspectors interviewed training staff to ensure thermal overload bypass operation was part of the long range training program, and that the appropriate training had been in place and conducted prior to the CDBI. The inspectors also interviewed operators and observed simulated operator actions in the simulator to assess operator knowledge on proper valve stroke indication, thermal overload actuation indication, and thermal overload bypass operation of the manually operated MOVs to ensure complete valve operation.

b. Findings

No performance deficiencies or findings were identified and the URI is closed.

4OA6 Meetings, Including Exit

On January 7, the inspectors presented the inspection results to Mr. W. Maguire and other members his staff. The inspectors confirmed that proprietary information was not included in the inspection report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel:
W. Maguire, Site Vice President
E. Callan, Plant Manager
S. Johnson, Assistant Plant Manager
R. Dickinson, Director of Training
P. Gardner, Director of Operations
R. Kreider, Director of Maintenance
C. Gerdes, Security Manager
D. Merchant, Radiation Protection Manager
D. Palena, Manager Nuclear Oversight
J. Hunter, Manager, Regulatory Assurance
S. Bobyock, Manager, Plant Engineering Programs
N. Dennin, Shift Operations Superintendent
R. McLaughlin, Operations Support Manager
W. Lewis, Senior Engineering Manager
M. Gillin, Balance of Plant Engineering Manager
K. Slough, Mechanical/Structural Engineering Design Manager
M. DiRado, Engineering Rapid Response Manager
J. Risteter, Radiation Protection Manager
R. Harding, Regulatory Assurance Engineer
C. Goff, Operations Training Manager
T. Carr, Maintenance Supervisor
R. Rhode – Licensed Operator Requalification Training Supervisor
V. Hydro, Simulator Supervisor
R. Forst, Annual Operating Exam Developer
S. Cohen, Annual Operating Exam Developer
J. Mihm, Biannual Written Developer
F. Burzynski, Systems Engineer
M. Barth, Systems Engineer
J. Brittain, Senior Staff Engineer
S. Deihm, Work Week Manager
M. Leahy, Procurement Engineer Supervisor
M. Minicozzi, System Engineer
B. Tracey, Systems Engineer
G. Weiss, Systems Engineer
P. Welch, Maintenance Planner QV Inspector
D. Zaharchuk, Systems Engineer
J. Commiskey, Radiological Engineer
D. Wahl, Environmental Scientist

NRC Personnel:
E. DiPaolo, Senior Resident Inspector
N. Sieller, Resident Inspector
J. Hawkins, Acting Resident Inspector
A. Rosebrook, Senior Project Engineer
C. Crisden, Emergency Preparedness Specialist

LIST OF ITEMS OPENED OR CLOSED

Opened

None

Closed

05000352/353/2009006-02	URI	Technical Specification Requirements for Motor Operated Valve Thermal Overload Bypass Feature (Section 4OA5.2)

Opened and Closed

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

Common References
Limerick Unit 1 and Unit 2 UFSAR
Limerick Unit 1 and Unit 2 TSs
Limerick Unit 1 and Unit 2 Technical Requirements Manual
Limerick Unit 1 and Unit 2 Operator Logs

Section 1R01: Adverse Weather Protection
Issue Reports
1091311

Procedures
WC-AA-107, Seasonal Readiness, Revision 8
ARC-MCR-02, E-5, Spray Pond Pump Station Temperature Trouble, Revision 2
GP-7, Cold Weather Preparation and Operation, Revision 43

Work Orders
R1156051, Plant Heating Steam and Auxiliary Steam System

Miscellaneous
Letter of Certification of 2010 Limerick Winter Readiness, dated November 15, 2010
Open Winter Readiness Work items List

Section 1R04: Equipment Alignment
Procedures
S92.9.N, Routine Inspection of the Diesel Generators, Revision 59

Miscellaneous
System Notebook, Diesel Generator and Auxiliary Systems
Diesel Generator System Health Report

2S92.1.N (COL – 3), Equipment Alignment for 2C Diesel Generator, Revision 23
UFSAR Section 8.3.1.1.3, Standby Power System
Licensee Event Report 1-96-006, CREFAS Inoperable Requiring Entry into TS 3.0.3, May 30, 1996
2S55.1.A (COL), Equipment Alignment for Automatic Operation of HPCI System, Revision 17

Section 1R05: Fire Protection

Issue Reports
1129649

Procedures
F-S-001, Pre-Fire Plan Strategy for Spray Pond Structure Western Half (Fire Area 122), Revision 12
F-S-002, Pre-Fire Plan Strategy for Spray Pond Structure Eastern Half (Fire Area 123), Revision 10
ARC-MCR-006Q3L Turbine 239/269 Cond. Area/ TB, Revision 4
OP-MA-201-007, Fire Protection System Impairment Control, Revision 6
S22.8.H, Inoperable Fire Protection Equipment Actions, Revision 24
ST-7-084-925-0, Fire Door Closing Mechanism Inspection, Revision 5
F-A-024, Control Room and Peripheral Rooms
F-A-026, Remote Shutdown Room

Miscellaneous
A1747020
A1780973

Section 1R06: Flood Protection

Issue Reports
1154883

Procedures
SE-4-1, Reactor Enclosure Flooding, Revision 8

Miscellaneous
A 0-817141, Evaluate Door Preventive Maintenance

Section 1R11: Licensed Operator Requalification Program

Issue Reports
1140582

Procedures
LSES – 2004, Simulation Scenario, Revision 7
TQ-AA-150: Operator Training Programs Revision 4
T-225, Startup and shutdown of Suppression Pool and Drywell Spray Operation, Revision 020

Miscellaneous
TQ-AA-150, Operator Training Programs, Revision 4
HR-AA-07-101 NRC Licensed Operator Medical Examination
LLOR1001B, Residual Heat Removal System Review, SDC and ADHR
LLOR1001I, 1 Refueling 13 Plant Modifications
OP-AA-105-102 NRC Active License Maintenance

EPRI NP-5562 Analysis of Anticipated Transients without Scram in Severe BWR Accidents
Simulator Test Review Board Minutes 2009-4 7/29/2009

Job Performance Measures (JPMs)
058, 086, 098, 099, 103, 114, 129, 131,134, 150, 210, 232, 261,515, 523, 758

Scenarios
LSES-2004, LSES-2035, LSES-3003, LSES-3004, LSES-5002, LSES-5003, LSES-5005, LSES-7008

Written Examinations
NRC-2009-03-RO, NRC-2009-03-SRO, NRC-2009-04-RO, NRC-2009-04-SRO, NRC-2009-05-SRO, NRC-2009-05-SRO

Simulator Work Requests
SWR 2008093/11090, Excessive Lag in Bypass Valve Closure as Pressure Drops after a Turbine Trip
SWR 2008094/11107, Discrepancy between Plant and Simulator Generator Output
SWR 2008144/11338, Following core update, SLC shutdown takes longer than GE analysis time
SWR 2008133/11272, Incorrect FW Temperature Used in Modeling Feed-Water Rupture in Containment
SWR 2008121/11192, Open Lamp and OHA for TBV Should Operate at Same Set-point
SWR 2008102/11130, During ATWS, Power Remains Too High as Level is Lowered

Transient Tests
7.01, Reactor Scram, May 30, 2009 (Baseline: actual plant trips, SRB evaluation)
7.02, Trip of All Feed-water Pumps, May 30, 2009
7.03, Closure of All MSIVs, May 30, 2009
7.04, Trip of Both Recirculation Pumps, May 30, 2009

Annual/Normal Evolution Tests
6.12, Steady State Performance/Drift Test at 100% Power, July 26, 2009
1.12, Simulator to Reference Plant Critical Parameter Comparison, March 25, 2008
6.09, Normal Operations Performance Test: Reactor Trip Followed by Recovery to Rated Power, November 22, 2009

Malfunction Tests
3-MPC257, Suppression Pool Water Leak to Reactor Enclosure, July 11, 2010
3-MED250B, Failure of 24 VDC Power Supply E/S-X-10082, March 18, 2007
3-MED015B, Inadvertent Trip of Safeguard Feeder Breaker 201-D11, January 13, 2007
3-MRH562A, RHR Pump B Suction Strainer Clogs – Small, August 9, 2009
3-MVI529B, RPV Pressure Transmitter PT42-103A Fails Low, June 28, 2008
3-MVI232C, RPV Level Transmitter LT-42-1N080B Fails Upscale, August 23, 2008

Non ANSI Testing
10-002-X-A, Integrated Response to Isolation of Condensate to Feed-water String A, November 16, 2009
10-002-VII-D, Integrated Response to Trip of Four Circulating Water Pumps, November 16, 2009
Physical Fidelity Checks Panel 00C424, October 2, 2010
Physical Fidelity Checks Panel 10C201-Remote Shutdown Panel, October 2, 2010

Section 1R12: Maintenance Effectiveness

Issue Reports
1137553
1565145

Procedures
ASME Sect. III Code 3 Case N-513-2 Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping Section XI, Division I
ER-AA-310, Implementation of the Maintenance Rule, Revision 8
ER-AA-310-1004, Maintenance Rule – Performance Monitoring, Revision 8
MA-AA-716-210, PCM Process, Revision 10

Miscellaneous
Action - A1782939
Engineering Change Request 03-00705
Operability Evaluation, OPE-10-008, Revision 08
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Section 1R13: Maintenance Risk Assessments and Emergent Work Control

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1144472	1148152				

Procedures
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WC-LG-104-1001, Guideline for the Review, Screening and Execution of Operation Risk Activities, Revision 3
OP-AA-108-117, Protected Equipment Program, Revision D
MA-AA716-004, Attachment 2 Complex Troubleshooting, Revision 10
ER-AA-3003 Cable Condition Monitoring Program, Revision 0
OP-AA-106-101-1006, Issue Resolution Documentation Form, Revision 8
OP-AA-101-113-1004, Equipment Prompt Verbal Report, Revision 17
OP-AA-108-117, Protected Equipment Program, Revision D
OP-LG-108-117-1000, Limerick Protected Equipment Program, Revision 1
WG-AA-101, Online Work Control Process, Revision. 17
WG-LG-101-1001, Guideline for the Performance of Online Work/Online System Outages,

Miscellaneous
Generic Letter 80-30, Clarification of the Term "Operable" as it Applies to Single Failure Criterion for Safety Systems Required by Technical Specifications, April 10, 1980.
ECR 10-00458
OT-112
OT-104

Action Request
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A1751413
A1586003

A1663427
A1535446
A1709610
A1786141

Work Order
C0236019
C0233546
C0233547

Section 1R15: Operability Evaluations

Issue Reports

0642968	0642968	0985994	1115912	1137523	1140448
1143434	1144238	1144249	1144292	1145979	1151354
1152249					

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ASME Code Case N-513-2, Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping Section XI, Division 1
M-C-756-001 HPCI Turbine Inspection, Revision 26
OP-AA-108-115, Operability Determinations, Revision 9
OP-AA-108-115-1002 Attachment 1, Supplemental Considerations for On-Shift Immediate Operability Determinations, Revision 002
RT-2-011-252-0 (251-0) A Loop (B Loop) ESW Loop B Flow Balance, Revision 21
RT-6055-330-1(2) HPCI Turbine Over-speed Mechanism Operability Check, Revision 20
S92.9.N Routine Inspection of Diesel Generators, Revision 59
ST-6-055-230-1 HPCI Pump, Valve and Flow Test, Revision 74

Miscellaneous
Operability Evaluation OPE-10-008, Revision 8
ASME Code (OM) 1990 Sect. ISTC 4.2.9 (b)
GE SIL 392 Rev. 1 Improved HPCI Turbine/Mechanical Over-speed Trip Design
Generic Letter 90-05, Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping
LER 87-066-00 HPCI Inoperability Due to Malfunction of Hydraulic-Mechanical Over-speed Trip Mechanism
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Action Request
A1643599
A1538528
A1522918, Evaluation 50
A1733595

Work Order
C0231042
C0236115

Section 1R19: Post-Maintenance Testing

Issue Reports

1123479	0747229	0748913	0750139	0750404	0911901
0913964	0953751	0997302	1039893	1064929	1136029
1138439	1139723	1139996	1140214	1140215	1143600
1151949					

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ARC-MCR-222 F-5, Unit 2 Division 2 Safeguard Battery Ground, Revision 2
CC-MA-304, Establishing and Maintaining Component Classification, Revision 0
ER-AA-340-1001 GL 89-13 Program Implementation Instructional Guide, Revision 007
GP-8.4 U/1 (U/2) Attachment 1 Isolation Bypass, Revision 008
NE-C-211 CRL Control, Revision 011
NE-C-240 Component Identification and Descriptions, Revision 001
RT-2-011-254-0 ESW Loop B D/P and Flow Data Collection, Revision 022
ST-2-072-106-1 (2) 4 Div I Refuel Floor BOP Isolation LSF/SAA and SGTS Test, Revision 1
ST-6-092-365-0 Attachment 4 Inoperable Unit 1 Safeguard Power Supply Actions for Both Units, Revision 38
T-228, Inerting and Purging Primary Containment, Revision 022 (1)
2S11.1.A (COL-2) Equipment Alignment of ESW Loop 'B' System, Revision 33

Miscellaneous
Calculation 1001, Compartment Temperature Transients for Steam and Water Leaks, Revision 4b
IN 86-82 Failures of Scram Discharge Volume Vent and Drain Valves
P&ID 8031-M-61, Liquid Radwaste Collection, Sheet 4, Revision. 15
2A RRP Voltage Regulator Action Plan 12/15/10
Engineering Change 09-00551, Permanent Setpoint Change for TIS-025-101/201 B & D
Technical Evaluation for IR 390341, Recommendations for PMT of CREFAS Isolation Valves
Troubleshooting, Rework and Testing 10-127, Investigate Changing Leakrate of U2 DW Equipment Drain Sump Leak Rate

Action Request
A1606276, Technical Evaluation

Work Orders
C0217140
C0235528
C0217141
C0229269

Section 1R22: Surveillance Testing

Issue Reports

1134173	1132485	1117800	0836062	0844439	0884271
1052559	1123250	1133664	1133723	1137894	1137977
1138001	1138015				

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M-C-747-016 CRD Scram Vent and Drain Valve Examination and Maintenance, Revision 004
S32.8.A Placing Unit 1 Main Transformers and 11 Unit Aux Transformers in SVC, Revision 22
S92.9.N, Routine Inspection of the Diesel Generators, Revision 59
ST-4-LLR-361-1 Scram Discharge Volume Vent and Drain Valves, Revision 009
ST-6-047-200-1 SDV Valve Exercise Test, Revision 024
ST-6-049-230-1, RCIC Pump, Valve and Flow Test Revision 074
ST-6-052-760-1 Safeguard Piping Fill Quarterly Valve Test, Revision 017
ST-6-092-114-2, D24 Diesel Generator 24 Hour Endurance Test, Revision 29
ST-6-092-323-1 D13 DG LOCA/LOAD Reject Testing and Fast Start Operability Test Run, Revision 019
ST-6-092-365-0, Inoperable Unit 1 Safeguard Power Supply Actions for Both Units, Revision 38

Action Request
A1684886

Work Order
C0232841

Section 1EP4:Drill Evaluation
Issue Reports
1096028
1098708

Procedures
EP-AA-112-100-F-01, Shift Emergency Director Check List, Revision. K
EP-AA-114-F-01, Release In Progress Determination Guidance, Revision. D
Limerick Station Annex Table LGS 3-1, Emergency Action Matrix, Revision. 18
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Procedures
RP-AA- 376, Radiological Postings, Labeling, and Markings, Revision 5
RP-AA-376-1001, Radiological Postings, Labeling, and Marking Standard, Revision 5
RP-AA-503, Unconditional Release Survey Method, Revision 4

Section 4OA1: Performance Indicator Verification
Issue Reports

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1090880	1092212	1094965	1080457	1080717	1081159
1081428	1039368	1053889	1051357	1002432	1005495
1051506					

Procedures
ST-5-061-570-0, RadWaste Discharge Permit, Revision 43
ST-5-076-826-0, Monthly Gaseous Release Dose Calculations, Revision 14
LS-AA-2150, Monthly Data Elements for RETS/ODCM Radiological Effluent Occurrences, Revision 5

LS-AA-2140, Monthly Data Elements for NRC Occupational Exposure Control Effectiveness, Revision 5
CY-LG-120-105; Obtaining Samples from and Operation of the Reactor Enclosure Sample Station, Revision 11
CY-LG-120-110; Chemistry Sampling and Analysis, Revision 10
ER-AB-331-1006; BWR RCS Leakage Monitoring and Action Plan, Revision 2
LS-AA-2001; Collecting and Reporting of NRC Performance Indicator Data, Revision 13
LS-AA-2100, Monthly Data Elements for NRC Reactor Coolant (RCS) Leakage, Revision 5
LS-AA-2200; Mitigating System Performance Index Data Acquisition and Reporting, Revision 3
ST-5-041-885-1; Dose Equivalent I-131 Determination, Revision 19
ST-5-041-885-2; Dose Equivalent I-131 Determination, Revision 15
ST-6-107-596-1, Drywell Floor Drain Sump/Equipment Drain Tank Surveillance Log/OPCON 1,2,3, Revision 22
ST-6-107-596-2, Drywell Floor Drain Sump/Equipment Drain Tank Surveillance Log/OPCON 1,2,3, Revision 25

Miscellaneous
Main Control Room Operator Logs 11/1/2009-12/13/2010
NEI 99-02; Regulatory Assessment Performance Indicator Guideline, Revision 6
Reactor Oversight Program MSPI Basis Document, Limerick Generating Station, Revision 1
U1 MSPI Cooling Water System Unavailability and Unreliability Index for 2010
U2 MSPI Cooling Water System Unavailability and Unreliability Index for 2010

Section 4OA2: Problem Identification and Resolution

Issue Reports
1056715 1003826

Section 4OA3: Event Followup

Procedures
OT-1/2, Recirculation Pump Trip, Revision 45

Section 4OA5: Other Activities

Correction Action Documents
00985060

Evaluations
Limerick Position Paper on Compliance with Technical Specification 3.8.4.2 Motor Operated Valves Thermal Overload, Revision 0

Procedures
OP-LG-108-101-1004, Valves, Revision 4
OP-LG-103-102-1002, Strategies for Successful Transient Mitigation, Revision 5
ST-6-107-590-0, Daily Surveillance Log/Common Plant – At all times, Revision 87
RP-AA-214, Area TLD Surveillance, Revision 3

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access Management System
ANS	Alert and Notification System
CAP	Corrective Action Program
CDBI	Component Design Bases Inspection
CFR	Code of Federal Regulations
DEP	Drill and Exercise Performance
EAL	Emergency Action Level
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
ERO	Emergency Response Organization
ESW	Emergency Service Water
HPCI	High Pressure Coolant Injection
IR	Issue Report
IST	In-Service Testing
ISFSI	Independent Spent Fuel Storage Installation
JPM	Job Performance Measures
MG	Motor Generator
MOV	Motor-Operated Valve
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OOS	Out of Service
P&ID	Piping and Instrumentation Drawing
PI	Performance Indicator
PARS	Publicly Available Records
RHR	Residual Heat Removal
RTP	Rated Thermal Power
RWP	Radiation Work Permits
SDV	Scram Discharge Volume
SSC	Structure, System, Component
ST	Surveillance Test
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item